A trapping survey of small, ground-dwelling vertebrates in the Little Desert National Park, Victoria

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ABSTRACT

Compared to many parts of Victoria, there have been few systematic surveys of ground-dwelling vertebrates in the Little Desert National Park. Using pitfall and Elliott traps, we conducted a trapping survey of small, ground-dwelling vertebrates at three sites in the eastern block of this park. We trapped for seven consecutive days and nights on each of three sessions between October and December 2002. Over this period we trapped 20 species, comprising four native mammals, one exotic mammal and 15 species of herpetofauna. We used these data to appraise the adequacy of our sampling in this area. Our trapping detected the majority of ground-dwelling vertebrates known from the park that are likely to be trapped in pitfall and Elliott traps. Notably, this trapping procured the first specimen of the Little Pygmy-possum *Cercartetus lepidus* from this park, and incidental observations confirmed the occurrence of Rosenberg's Goanna *Varanus rosenbergi* within the park.

Key words: trapping survey, ground-dwelling vertebrates, Little Desert National Park, *Cercartetus lepidus*, *Varanus rosenbergi*

Introduction

The distribution of the vertebrate fauna of Victoria is reasonably well known, due to the many systematic surveys that have been conducted by field naturalist groups, government agencies and academic institutions and augmented by records from independent observers. The comprehensive Atlas of Victorian Wildlife electronic database (Department of Sustainability and Environment) is evidence of these activities. However, knowledge of the fine resolution of many species' distribution is incomplete, particularly for rare or cryptic taxa. Also, assemblages of species are dynamic; ecological succession, human-induced habitat alteration and stochastic events such as wildfire will affect species' distribution over time. This underscores the need not only for continuing fauna surveys of different areas, but also for ongoing monitoring to gauge changes over time.

The Little Desert National Park (LDNP) in western Victoria has been the subject of comparatively few systematic vertebrate surveys. Whilst the fauna of north-western Victoria has been documented by numerous zoologists (e.g., French 1888; Mattingley 1909; LCC 1974; Dixon 1978; Mather 1979; Menkhorst 1982; Coventry and Dixon 1984; Robertson *et al.* 1989; Coventry 1996a; b), commencing with the Blandowski Expedition of 1856-57 (Wakefield 1966a), few surveys have ventured south to the Little Desert. Of the studies conducted in the LDNP, one focused solely on mammals in south-western Victoria (Menkhorst and Beardsell 1982), and the other targeted a single habitat type (Broombush, dominated by *Melaleuca uncinata*) throughout north-western Victoria (Woinarski 1987).

As part of a larger, statewide project (Robley and Wright 2002), we conducted a trapping survey of small, ground-dwelling vertebrates in the most easterly of the three blocks that comprise the LDNP. This provided an opportunity to collect base-line data on these taxa for this area. Consequently, our aims were to document the small ground-dwelling vertebrates detected during our sampling, and, using these data, appraise the 'completeness' of our sampling results, particularly in relation to species previously recorded from this area.

Methods

Site descriptions

The 'eastern block' of the LDNP is the eastern-most third of this park, bounded to the west by the Nhill-Harrow Road, to the east by the Wimmera River, and to the north and south by agricultural land. The selection of trapping sites was determined by criteria relevant to the larger project (Robley and Wright 2002) in which this survey was nested. The broad criteria for the selection of sites was that each had differing floristics, a contrasting fire history, and was easily accessible by vehicle track (Fig. 1). Site A (36° 32´S 141° 48´E) was located beside Dahlenburgs Mill Track, adjacent to 'Salt Lake'. The vegetation at this site was dominated by Yellow Gum *Eucalyptus leucoxylon*, Brown Stringybark *E. baxteri* and Desert Banksia *Banksia ornata* atop an east-west dune that bisected the site. Heath associations either side of this dune consisted of Twiggy Beard-heath *Leucopogon costatus*, Pink Beard-heath *L. ericoides*, Flame Heath *Astroloma conostephioides* and Daphne Heath *Brachyloma daphnoides*. This site was last burnt in 1981 (A. Braithwaite, Parks Victoria, pers. comm.).

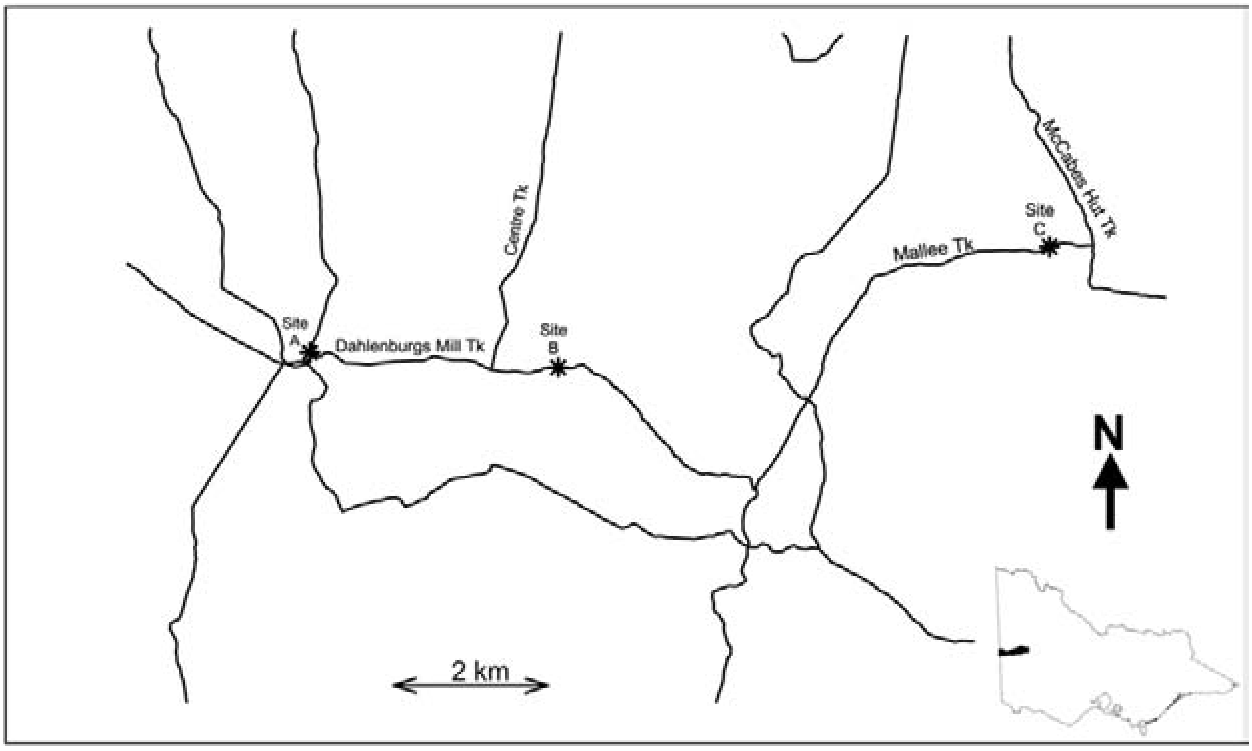

Figure 1. Location of trapping sites in the eastern block of the Little Desert National Park. Inset map shows location of the Little Desert National Park in Victoria.

Site B (36° 32′S 141° 50′E) was located beside Dahlenburgs Mill Track, approximately three kilometres east of Site A, and on the periphery of an ephemeral wetland that was dry at the time of sampling. The dominant vegetation at this site was Dumosa Mallee *Eucalytpus dumosa*, and, adjacent to the wetland, Desert Banksia, open heath and Spinifex *Triodia iritans*. This site was subjected to a management burn in 1991 (A. Braithwaite, Parks Victoria, pers. comm.).

Site C (36° 31′S 141° 54′E) was located beside Mallee Track, approximately six kilometres east-north-east of Site B. Dominant vegetation at this site consisted of very open Brown Stringybark, Dumosa Mallee and Desert Banksia, with low heath and Spinifex. This site was last burnt in 1996 (A. Braithwaite, Parks Victoria, pers. comm.).

Trapping and observations

At each site we deployed 20 pitfall traps and 20 Elliott folding aluminium traps, predominantly each in two lines of 10 traps, with approximately 10 m separating each trap, and approximately 40 m separating each trap line. Elliott traps (33 x 30 x 9 cm) were baited with a mixture of peanut butter, honey and rolled oats. Each pitfall trap consisted of a 20 litre plastic bucket sunk flush with the ground, and a flywire drift fence consisting of three 'arms', each two metres long, that centred over the bucket. The drift fences were approximately 30 cm high. The terminal end of each 'arm' was supported by a stake, and the lower edge (~2 cm) of the fence was buried to prevent animals from passing beneath it.

At Site A the Elliott traps and pitfall traplines ran parallel to the east-west dune; along the top of the dune, or in heathland on relatively flat ground to the north and south. At Site B the Elliott traps were placed through Mallee Gums in the ephemeral wetland (where there was virtually no understorey). Due to the extremely hard ground in this wetland, the pitfall traps were positioned a short distance away in a sandier substrate (which had a more complex vegetation structure). Four lines of five traps were placed at 25 m intervals. At Site C we installed pitfall traps in open country with low heath and sparse shrubs.

Three trapping sessions were undertaken: 30 September – 7 October, 4 – 11 November and 2 –9 December 2002. This resulted in seven full days and nights of trapping per session, and 840 trap days/nights (420 each for pitfall and Elliott traps) across all three sites. Traps were checked each morning, and Elliott traps were re-baited as needed. Captured animals were identified and released within approximately five metres of the point of capture.

Trap results were augmented by incidental observations of herpetofauna that were either detected (but not trapped) at trap sites, or observed whilst we were travelling to and from, or between, trap sites.

Analyses

After documenting trapping results and comparing sites and sessions, we applied two measures of completeness for our trapping. Firstly, we constructed species accumulation curves to map the recording of additional taxa throughout the study. Secondly, in order to estimate the completeness of the species' inventory for the trapping sites, we applied the Chao 2 estimator (Chao 1984; Colwell and Coddington 1994), a non-parametric method for estimating species richness from samples. This estimator takes the form:

$$S_{obs} + (L^2 / 2M),$$

where S_{obs} is the observed number of species in a sample, L is the number of species that occur in only one sample, and M is the number of species that occur in exactly two samples (Colwell and Coddington 1994). This procedure uses resampling to prevent sample order from affecting the prediction – we used 1000 iterations. Although we had numbers of individuals of each species, this analysis requires only presence – absence data. The Chao analysis was conducted using the software *EstimateS* (version 6.0b1; Colwell 2001).

Results

We recorded 403 trap captures comprising 20 vertebrate species (Table 1). This comprised 218 captures of herpetofauna: 1 species of frog, 14 reptiles (3 dragon species, 2 geckos, 1 legless lizard, 6 skinks and 2 elapid snakes); and 185 captures of mammals (4 native and 1 introduced species). The most commonly trapped species were Silky Mice *Pseudomys apodemoides* and Obscure Skinks *Morethia obscura*, representing 61% of the mammals and 40% of the reptiles, respectively. The introduced House Mouse *Mus musculus* comprised 10% of the total mammals caught. Several herpetofauna species were incidentally recorded in the eastern block of the LDNP, including three species not recorded during trapping: Western Blue-tongued Lizard *Tiliqua occipitalis*, Rosenberg's Goanna *Varanus rosenbergi* and Eastern Brown Snake *Pseudonaja textilis*.

Prior to this study, there were no confirmed records of the Little Pygmy-possum *Cercartetus lepidus* (Fig. 2) from the LDNP. Therefore, on the first trapping session, we assumed that all pygmy-possums that we caught were Western Pygmy-possums *C. concinnus*, which had been previously recorded in the park. Upon closer examination in the later trapping sessions, we realised that we were trapping both species, and subsequently recorded all pygmy-possums trapped in the first session as *Cercartetus* sp. (Table 1). The two species are distinguishable in the field by noting that *C. concinnus* has pure white hair on the ventral surface, and distinct demarcation of this white fur from the darker cinnamon-grey fur above, whereas *C. lepidus* has greyish fur below (although the tips of each hair may be white) that blends into the darker grey fur on its sides and dorsal surface. Both species were trapped at each site, and in the two latter trap sessions we caught more than twice as many *C. lepidus* as *C. concinnus* (17 vs 8). Both species were caught exclusively in pitfall traps, and at times each species was captured within 20 m of each other. We caught considerably more pygmy-possums in the first session (n = 27), than in the later sessions (n = 16 and 9). During the first trapping session the mean frequency of captures (for both species combined) was 6.4 per 100 pitfall trap nights. For *C. concinnus*, the mean frequency of capture per 100 pitfall trap nights was 1.2 and 0.7 for sessions 2 and 3, respectively. For *C. lepidus,* the equivalent figures are 2.6 and 1.4. Although we did not determine the age or sex of the pygmy-possums, we did not note any pouch young when handling them.

Table 1. Species trapped in the Little Desert National Park during three trapping sessions between September and December 2002. P = trapped in pitfall trap.

E = trapped in Elliott trap. Numbers beside letters indicate number of individuals trapped.

	Site A			Site B			Site C			Total captures
Session	**1**	**2**	**3**	**1**	**2**	**3**	**1**	**2**	**3**	
Herpetofauna										
Spadefoot Toad *Neobatrachus sp.*	P2		P1	P16		P1				20
Norris's Dragon *Amphibolurus norrisi*		P1		P1	P2			P1		5
Painted Dragon *Ctenophorus pictus*		P2		P4	P7	P5	P3	P6	P2	29
Eastern Bearded Dragon *Pogona barbata*									P1	1
Marbled Gecko *Christinus marmoratus*				P2	P9					11
Wood Gecko *Diplodactylus vittatus*				P1	P2	P2	P3	P3	P1	12
Common Scaly-foot *Pygopus lepidopodus*		P1		P1	P1	P1		P1		5
Eastern Striped Skink *Ctenotus orientalis*					P5	P1				6
Delicate Skink *Lampropholis delicata*		P1		P2						3
Bougainville's Skink *Lerista bougainvillii*		P2	P2		P9	P4				17

	Site A			Site B			Site C			Total captures
Session	**1**	**2**	**3**	**1**	**2**	**3**	**1**	**2**	**3**	
Boulenger's Skink *Morethia boulengeri*			P3						P1	4
Obscure Skink *Morethia obscura*	P18	P5	P12	P13	P7	P7	P15	P6	P4	87
Stumpy-tailed Lizard *Trachydosaurus rugosa*		E4	E1		E3				E1	9
Bardick *Echiopsis curta*								P1		1
Mitchell's Short-tailed Snake *Suta nigriceps*		P1		P2	P1		P1	P3		8
Mammals										
Western Pygmy-possum *Cercartetus concinnus*		P4	P1			P1		P1	P1	8
Little Pygmy-possum *Cercartetus lepidus*			P3		P8	P2		P3	P1	17
Pygmy-possum *Cercartetus sp.*	P10			P15			P2			27
House Mouse *Mus musculus*	P2E3	P1E3	E7					E1	E1	18
Silky Mouse *Pseudomys apodemoides*	P9E8	P8E25	P4E27	P7	P1	P1	P10	P2E6	P2E2	112
Fat-tailed Dunnart *Sminthopsis crassicaudata*					P1	P1	P1			3
Captures										
Pitfall	41	26	26	64	53	26	35	27	13	311
Elliott	11	32	35	0	3	0	0	7	4	92
Total	52	58	61	64	56	26	35	34	17	403
Species richness	5	11	9	11	13	11	7	11	10	

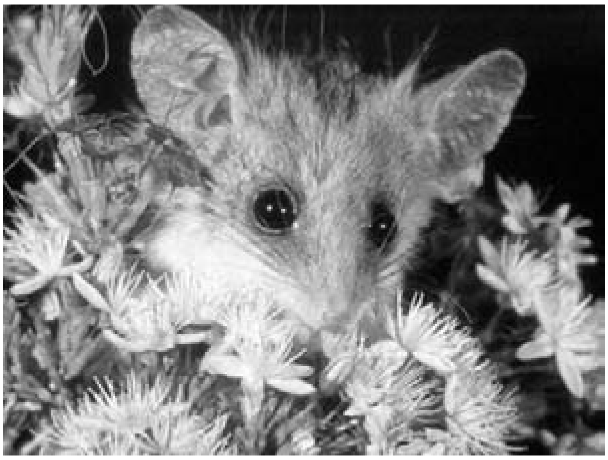

Figure 2. The Little Pygmy-possum *Cercartetus lepidus*. This animal is the first confirmed record of this species from the Little Desert National Park. Photograph by Nick Clemann.

Similarly, our observations of two Rosenberg's Goannas *V. rosenbergi* represent the first records of this species from the LDNP. The first individual, an adult, was walking along Mallee Track (36° 31´S 141° 53´E) when observed at 1130 hrs (Eastern Summer Time) on 1 October 2002. When pursued, this lizard rapidly scaled a mallee eucalypt beside the track, and was not captured. The second individual (Fig. 3) was walking along McCabes Hut Track (36° 30´S 141° 54´E) when observed at 1240 hrs on 9 November 2002. When pursued, this lizard also scaled a mallee eucalypt beside the track, but remained within range of a noosing pole, and was thus captured. This specimen was an adult male. Two other species of varanid occur within the LDNP (Gould's Goanna *V. gouldii* and the Tree Goanna *V. varius*), and, although they can be superficially similar, may be distinguished from *V. rosenbergi* on the basis of the following features: *V. gouldii* has a distinctive yellow or whitish tail tip (absent in the other species); *V. rosenbergi* has regular, alternating dark and light bands on the tail that continue to the (dark) tip, whereas *V. varius* has irregular yellow cross-bands that tend to become broader distally. *Varanus varius* also attains greater size than the other species (may exceed 2 m, versus approximately 1.6 and 1 m for *V. gouldii* and *V. rosenbergi*, respectively), and, in this region, tends to be restricted to the margins of watercourses, whereas the other two species frequent desert heath within the park.

Pitfall traps returned 311 captures, compared to 92 from Elliott traps, a significant departure from parity (χ^2 = 119, d.f. = 1, p <0.0001). Similarly, if we exclude Site B because Elliott traps were positioned in a different vegetation type, pitfall traps again returned significantly more captures than Elliott traps at Sites A and C combined (χ^2 = 24.284, d.f. =

1, $p < 0.0001$). Both mammals captured in Elliott traps (*Mus musculus* and *Pseudomys apodemoides*) were also caught in pitfall traps, whilst the Stumpy-tailed Lizard *Trachydosaurus rugosus* was only caught in Elliott traps. In contrast, 17 species that were recorded from pitfall traps were not captured in Elliott traps (Table 1). The success of Elliott traps was lowest at Site B, where only three *T. rugosus* were trapped. At Site C, Elliott traps captured all three of these species during the third session, but only the mammals during the second session, and nothing during the first session. Site A returned the greatest number of animals captured in Elliott traps; an overall total of 78 captures of these three species. *Pseudomys apodemoides* formed the majority of captures in Elliott traps (74%), and was captured significantly more frequently in Elliott (n = 68) than pitfall traps (n = 44), ($\chi^2 = 5.142$, d.f. = 1, $p = 0.023$).

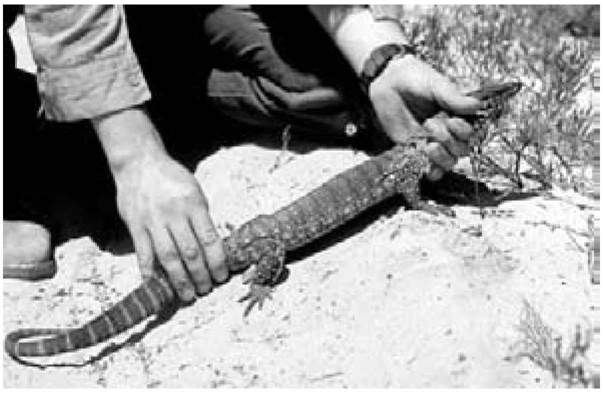

Figure 3. A male Rosenberg's Goanna *Varanus rosenbergi*. This is the first confirmed record of this species from the Little Desert National Park. Photograph by Nick Clemann.

The total number of animals captured differed significantly between each of the three trapping sessions (Table 2), with considerably fewer captures during the third session. The number of captures between sites within each trapping session also differed significantly (Table 2); Site C returned the lowest number of captures during each session. Within each site, total number of captures differed significantly between sessions for sites B and C, but not for A (Table 2). None of the comparisons between sites or sessions revealed significant differences in species richness (Table 2).

Species accumulation curves (Fig. 4) indicate that the cumulative number of species trapped at each site, and for all sites combined, levelled during the final trapping session. However, more species were added to these tallies during this session, suggesting that a few species remained undetected.

We applied Chao 2 to trapping data only (all sites and sessions combined, excluding incidental records) in order to estimate the species richness only within our formal trapping sites, and not over the broader area encompassed by incidental records. Similarly, we excluded the pygmy-possum captures from the first trapping session, as these were an amalgam of two species. Chao 2 estimated that there were 22 'trappable' species at the sites, suggesting that we trapped 91% (20) of the species available to be trapped.

Discussion

The Little Desert National Park has a rich ground-dwelling vertebrate fauna, dominated by herpetofauna. As ectotherms, detection and trapping of most members of this group are sensitive to weather variations over seasons and within days. We noted, for example, that we trapped numerous Spadefoot Toads *Neobatrachus* sp. immediately following rain during the first session. Similarly, the weather during the final session was generally cooler and wetter than previous sessions, which we believe contributed to the significant reduction in overall captures. Also, reduced numbers of captures (but no difference to the recorded species richness) during this final session may be partly attributable to the absence of mate-seeking behaviour. For many of these species, this activity has concluded by December. Generally, Site C

Table 2. Tests of homogeneity for number of captures and species richness within and between sites and trapping sessions. Degrees of freedom for all tests = 2. Bold figures indicate significant results.

	χ^2	*P* value
Comparison of total captures between all sessions	10.294	**0.0058**
Comparison of species richness between all sessions	2.477	0.2898
Comparison of number of captures between sites for Session 1	8.437	**0.0147**
Comparison of species richness between sites for Session 1	2.437	0.2957
Comparison of number of captures between sites for Session 2	7.190	**0.0275**
Comparison of species richness between sites for Session 2	0.229	0.8918
Comparison of number of captures between sites for Session 3	31.179	**<0.0001**
Comparison of species richness between sites for Session 3	0.200	0.9048
Site A total captures between sessions	0.738	0.6914
Site A species richness between sessions	2.240	0.3263
Site B total captures between sessions	16.495	**0.0003**
Site B species richness between sessions	0.229	0.8918
Site C total captures between sessions	7.141	**0.0281**
Site C species richness between sessions	0.929	0.6284

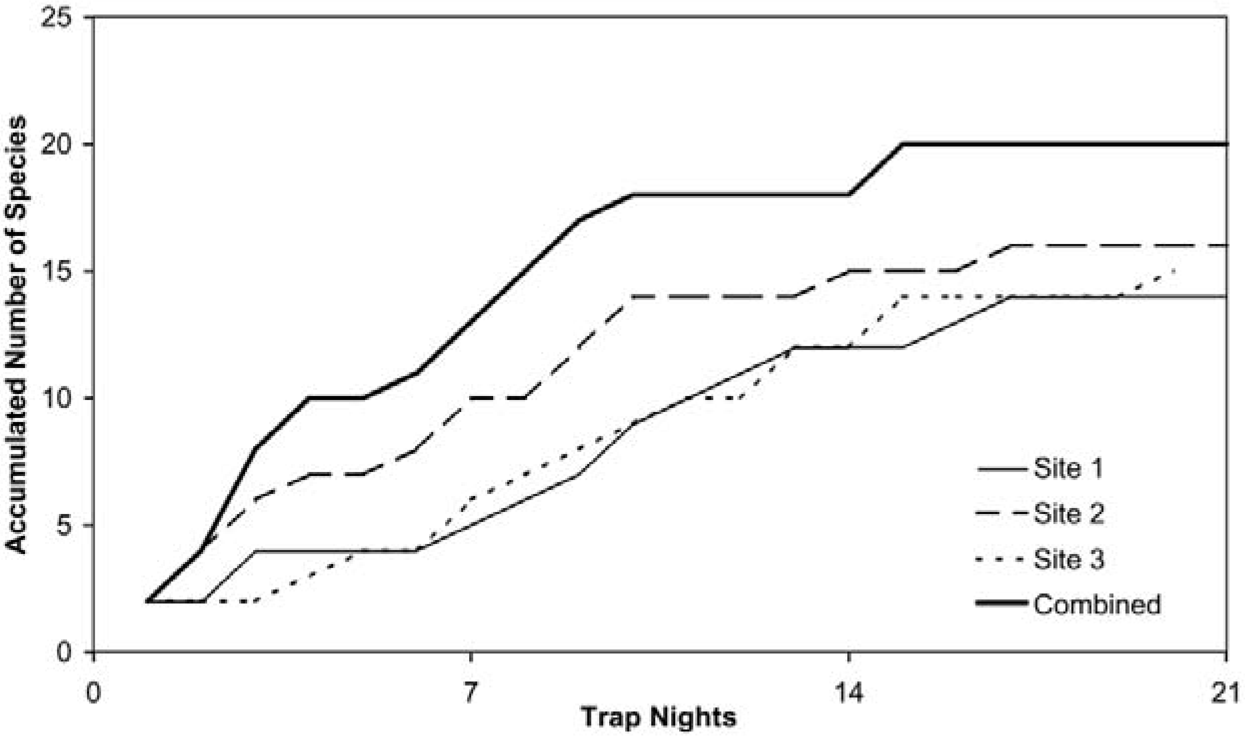

Figure 4. Species accumulation curves for pitfall and Elliott trapping at each of the three trap sites in the Little Desert National Park. Data from all trapping sessions has been combined to create the curves.

returned fewer captures (although similar species richness) than the other sites, a factor potentially influenced by the more recent burning of this site compared to the other sites. The dramatic difference between number of captures between sites during the last trapping session was influenced by a marked reduction in captures at Sites B and C (but not A) (Table 2). Whilst Site A also had relatively few captures of herpetofauna (except Obscure Skinks *Morethia obscura*) during this session, this was countered by the relatively high number of captures of Silky Mice *Pseudomys apodemoides* and House Mice *Mus musculus* in Elliott traps. The very low numbers of captures (and only a single species trapped) in Elliott traps at Site B was undoubtedly affected by the location of traps in habitat with no understorey, and very little ground debris. It is unfortunate that the Elliott traps at this site were not located in the same habitat as the pit traps, but this positioning was dictated by factors associated with the larger study in which the trapping was nested.

We apparently trapped the majority of 'trappable' species at each of the three sites by the end of the second session (Fig. 4 and known occurrence of animals from data on the Atlas of Victorian Wildlife database). Species accumulation curves for combined data from all trapping sessions began to level-off by the end of the second trapping session, although further species were detected at every site during the final session, indicating that we had recorded the majority (but perhaps not all) of the species that are likely to be trapped at each site (Fig. 4). We stress that these curves assume that the local species assemblage is roughly homogenous, both spatially and temporally (Colwell and Coddington 1994). Also, the species accumulation curve is often a strongly (negatively) biased estimator of species richness, a bias reduced by the use of Chao estimators (Colwell and Coddington 1994). Chao 2 analysis indicated that the trappable species inventory was 91% 'complete', a figure that generally accords with the species accumulation curves and historic data from the Atlas. Species known from the area but not trapped included those rarely caught in pitfall and Elliott traps (Western Blue-tongued Lizard *Tiliqua occipitalis*, Gould's Goanna *Varanus gouldii* and Tree Goanna *V. varius*), and species whose activity times and habitat are restricted (Striped Worm-lizard *Aprasia striolata*). Other species, such as Carnaby's Wall Skink *Cryptoblepharus carnabyi*, Large Striped Skink *Ctenotus robustus* and Grey's Skink *Menetia greyii*, may not occur in the immediate vicinity of our trap sites, or may require greater trapping effort to detect. The position of our sites meant that we were unlikely to capture frogs other than the arid-adapted *Neobatrachus* spp.

Pseudomys apodemoides prefers low, floristically diverse shrub cover that provides a year-round supply of food (Cockburn 1981). Cockburn (1981) suggests that suitable vegetation occurs between 3 and 10 years after a fire. Interestingly, Site A had not been burnt for approximately 21 years, yet this site yielded the most captures of this species. Considerably fewer were trapped at the other sites - 28 at Site C (burnt around six years before this study – and with considerably less shrub cover than the other sites at the time of trapping), and 9 at Site B (burnt around 11 years prior). All at Site B were captured in pitfall traps, however the low number of captures at this site is almost certainly attributable to the positioning of the Elliott traps in habitat with virtually no ground cover or understorey.

Confirmation of the presence of the Little Pygmy-possum *Cercartetus lepidus* and Rosenberg's Goanna *Varanus rosenbergi*, both species of conservation concern (DSE 2003), in the LDNP reinforces the value of continuing study in a range of ecosystems. Prior to this study, specimens of *C. lepidus* had not been procured from the LDNP, although Conole (1996) captured this species south of the LDNP. Woinarski (1987) reported a capture of this species in the LDNP, but a voucher specimen was not collected. Menkhorst and Beardsell (1982) did not record *C. lepidus* in the LDNP during a mammal survey that incorporated this area, and Bennett and Lumsden (1995b) note that its status in the area is not clear. Our voucher specimen (Museum Victoria specimen C31647) provides confirmation of the species' occurrence in this park.

Cercartetus lepidus was first recorded on the Australian mainland in South Australia in 1976 (Aitken 1977). Later in the same year this species was captured in the Sunset Country in north-western Victoria, however it was mistakenly considered to be *C. concinnus* until the specimen arrived at the (then) National Museum of Victoria, where it was identified as *C. lepidus* (Dixon 1978). During our first trapping session, we made a similar mistake, reckoning that all of the Pygmy-possums we captured were *C. concinnus*, a species long known from the LDNP (Wakefield 1966b). After close examination during subsequent trapping sessions, we recognised that we were trapping both *C. concinnus* and *C. lepidus*. That these species are syntopic in western Victoria has been previously noted by Conole (1996), who captured both taxa in the same pitfall trap at a site just south of the LDNP.

Both *C. concinnus* and *C. lepidus* are rarely captured in cage or aluminium traps, but may be reliably trapped in pitfall traps with drift fences (Bennett and Lumsden 1995a; b). Within the Big Desert, these species have been pit-trapped with a mean frequency of 1.2 and 1.3 captures per 100 pitfall trap nights, respectively, from known sites of occurrence (Bennett and Lumsden 1995a; b). During our first trapping session, the mean frequency of captures for both species combined was 6.4 per 100 pitfall trap nights. During the latter two sessions, our frequency of captures for each species were similar to those reported by Bennett and Lumsden (1995a; b). Interestingly, although *C. concinnus* was known to occur in the LDNP prior to this study, and *C. lepidus* was not confirmed there, we trapped twice as many of the latter species than the former during sessions 2 and 3 (and more *Cercartetus* sp. during the first trap session than the other sessions combined). This preponderance of captures in mid-spring versus later in the season and early summer may reflect increased activity associated with breeding behaviour or abundant food resources at that time. Although it is suspected that both species may breed at any time of the year (Bennett and Lumsden 1995a; b), there may be a period of reduced reproduction for *C. concinnus* in late summer (Bennett and Lumsden 1995a), and Bennett and Lumsden (1995b) note that the relationship between timing and frequency of births for *C. lepidus* and the availability of food resources is not known. Conole (1996) found *C. lepidus* to be more abundant than *C. concinnus* in Desert Stringybark *Eucalyptus arenacea* forest south of the LDNP that had been subject to fire approximately 13 years earlier. Similarly, we trapped most *C. lepidus* (and *Cercartetus* sp. during the first session) at Site B which had been burnt 11 years earlier, and less at Sites A and C (burnt 21 and 6 years ago respectively).

Until recently, the Victorian distribution of *V. rosenbergi* consisted of a single record in the north-east of the state, and several records in the Big Desert (Atlas of Victorian Wildlife database). However, Watharow (1998) recorded two road-killed specimens at Gymbowen, south of the LDNP. Thus, our records are the first documented from the LDNP. Both *V. rosenbergi* that we observed climbed mallee eucalypts when pursued, although they are generally considered a ground-dwelling species (e.g., Wilson and Knowles 1988; Vincent and Wilson 1999; Cogger 2000).

Land managers are often particularly concerned with taxa listed as threatened by regulatory agencies. Several of the species detected during this study are listed as threatened by DSE (2003). These include the Bardick *Echiopsis curta* (Vulnerable), Western Blue-tongued Lizard *Tiliqua occipitalis* (Data Deficient), Rosenberg's Goanna *Varanus rosenbergi* (Vulnerable). Additionally, the four species of native mammal that we trapped (Silky Mice *Pseudomys apodemoides*, Western Pygmy-possum *Cercartetus concinnus*, Little Pygmy-possum *C. lepidus* and the Fat-tailed Dunnart *Sminthopsis crassicaudata*) are listed by DSE (2003) as being Near Threatened.

In concert with the few other studies in the immediate area, our trapping data provides a useful benchmark for the LDNP, and a comparison for similar studies. Despite the temporal, seasonal and geographic limitations of our sampling, we trapped a large proportion of the small, ground-dwelling mammals and herpetofauna known from the LDNP, and confirmed the occurrence of two species whose status in the park was uncertain. This suggests that our understanding of the biota of similarly under-surveyed areas (including other parts of the LDNP) will be enhanced through further study. For future surveys in the eastern block of the LDNP, we recommend that, although we recorded the majority of species likely to be present in the immediate area around our sites, additional sites across more habitats are likely to record some of the species that we failed to detect. Also, the duration of our trapping provided a robust sample of the fauna likely to occur in the area, therefore we recommend that future sampling in this area be conducted for *at least* this period of time.

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